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10/544,116

10/04/2005

Luc Moens

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05/20/2011

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EXAMINER

LISTVOYB, GREGORY

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The time period for reply, if any, is set in the attached communication.



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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/544,116  
Filing Date: October 04, 2005  
Appellant(s): MOENS ET AL.

\_\_\_\_\_  
Arthur J. Steiner\_\_\_\_\_  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed 2/22/2011 appealing from the Office action mailed 10/22/2010.

**(1) Real Party in Interest**

The examiner has no comment on the statement, or lack of statement, identifying by name the real party in interest in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

Claims 29 through 41 are pending in this Application.

**(4) Status of Amendments After Final**

The examiner has no comment on the appellant's statement of the status of amendments after final rejection contained in the brief.

**(5) Summary of Claimed Subject Matter**

The examiner has no comment on the summary of claimed subject matter contained in the brief.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The examiner has no comment on the appellant's statement of the grounds of rejection to be reviewed on appeal. Every ground of rejection set forth in the Office action from which the appeal is taken (as modified by any advisory actions) is being maintained by the examiner except for the grounds of rejection (if any) listed under the subheading "WITHDRAWN REJECTIONS." New grounds of rejection (if any) are provided under the subheading "NEW GROUNDS OF REJECTION."

**(7) Claims Appendix**

The examiner has no comment on the copy of the appealed claims contained in the Appendix to the appellant's brief.

**(8) Evidence Relied Upon**

6635721	Moens et al	10-2003
5889126	Kaplan et al	03-1999
WO 98/18862	Moens et al	05-1998

**(9) Grounds of Rejection**

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 29-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaplan et al (US 5889126) herein Kaplan ((cited in the previous Office Action) in view of Moens (WO 98/18862, cited with equivalent US patent 6635721) (cited in the previous Office Action)..

Regarding claims 29-33, Kaplan discloses powdered thermosetting compositions which comprise:

A powdered thermosetting composition comprising:

a) a carboxylic acid group containing amorphous polyester having an acid number of from 10 to 400 mg KOH/g (see Abstract) and Mn within the range of 300-15000 (see Claim 2) prepared from:

(a) a polyacid constituent comprising:

(i) at least 50 mol %, preferably 80 mol % of isophthalic acid (IPA) (see Column 2, line 55); and

(ii) the balance of another aliphatic, cycloaliphatic or aromatic polyacid, including cyclohexanedicarboxylic acid (see Column 2, line 65);

and

(b) a polyol constituent comprising:

(i) one or more of a linear chain aliphatic C4-16 diol (see Column 3, line 10);

(ii) at least 50% mol of neopentyl glycol (NPG) (see Column 3, line 20);

(iii) another linear chain aliphatic and/or cycloaliphatic diol, including 1,4-butanediol, ethylene glycol trimethylolpropane (see Column 3, line 15).;

and

(iv) small amount of a polyol with 3 or more hydroxyl groups (see Column 3, line 20); and

J3) a cross-linking agent having at least two hydroxyalkylamide groups (see Abstract); where powdered thermosetting composition contains no semi-crystalline polyester.

Art Unit: 1765

Regarding (i), Kaplan does not teach 81-100% of isophthalic acid (The reference discloses at least 50%, preferably 80%). However, clause "at least 50%" covers the range of 81-100%.

In addition, in the case where the claimed ranges "overlap or lie inside ranges disclosed by the prior art" a *prima facie* case of obviousness exists. *In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); *In re Woodruff*, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990), *In re Geisler*, 116 F.3d 1465, 1469-71, 43 USPQ2d 1362, 1365-66 (Fed. Cir. 1997), *Titanium Metals Corp. of America v. Banner*, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985), *In re Harris*, 409 F.3d 1339, 74 USPQ2d 1951 (Fed. Cir. 2005), *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992); and MPEP § 2144.05.

A particular parameter must first be recognized as a result-effective variable, i.e., a variable which achieves a recognized result, before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation. *In re Antonie*, 559 F.2d 618, 195 USPQ 6 (CCPA 1977).

Therefore, it would have been obvious to a person of ordinary skills in the art to use 81-100% in Kaplan's composition, since it can be determine in the course of routine experimentation.

Regarding claim 29, Kaplan teaches both individual amorphous polyester and its mixture with semi-crystalline polymer (see Abstract).

Art Unit: 1765

Regarding Claims 34, 40 and 41, Kaplan teaches flow control agent (see Column 5, line 30), film application apparatus, coating temperature of 200C and aluminium plate substrate (see Column 8, line 65).

In addition, note that components of claims 30, 32, 33 and 37 are optional.

Note that Kaplan does not teach ICI (cone/plate) viscosity values at 200C. However, since the above value primarily depends on Molecular Weight, Kaplan's composition meets the viscosity values of Claim 35.

Kaplan does not disclose exact composition of amorphous polyester as claimed in Claim 20. Consequently, since Tg is a function of the composition structure, Kaplan does not teach Tg values within the claimed range.

However, Kaplan's disclosure does not preclude the composition of Claim 29 of the Application examined, since the reference discloses all the claimed components.

According to MPEP 2123, disclosed examples and preferred embodiments do not constitute a teaching away from a broader disclosure or nonpreferred embodiments (see also *In re Susi*, 440 F.2d 442, 169 USPQ 423 (CCPA 1971), *In re Gurley*, 27 F.3d 551, 554, 31 USPQ2d 1130, 1132 (Fed. Cir. 1994), *In re Fulton*, 391 F.3d 1195, 1201, 73 USPQ2d 1141, 1146 (Fed. Cir. 2004).

Regarding cross-linking agent, In Example 1 of Kaplan 501.8 g of neopentyl glycol, 533.3% of isophthalic acid, 138.2 g of cyclohexane dicarboxylic acid and 186.39 g of dimethyl adipate combined with 80.37 g cross-linking agent (i.e. 1-amino-2-propanol, which is claimed hydroxylalkylamide). Thus, amount of cross-linking agent is within the range of 1-10% wt. In this case the amount of polyester is within of claimed range of 50-98% wt.

In addition, Moens discloses a composition with 70-100% mol of isophthalic acid.

Moens teaches powdered thermosetting composition, having the same structure as claimed in Claim 29 of the Application.

Moens discloses thermosetting composition (see Abstract) comprising amorphous polyester with acid number within the range of 15-100 mg KOH (see Claim 1) containing 70-100% mol of Isophthalic Acid 0-30% of at least one other aliphatic acid 70-100 mol% of neopentyl diol and 0-30 mol% of at least one other aliphatic polyol (see Abstract) and hydroxyalkylamide as a crosslinking agent in thermosetting coating composition (see Claim 17).

Moens teaches that polyester has  $M_n$  values, determined by GPC, within the range of 1100-15500, where  $T_g$  is 40-80°C and melt viscosity is 5-15000 Mpa\* s (see Claims 1, 10, 12, 13)



Art Unit: 1765

Moens discloses fumaric, maleic, terephthalic acid, 1,4 butanediol and trimethylolpropane (see Column 6, line 5 and line 20).

Moens discloses amorphous polyester containing 70-100% mol of Isophthalic Acid, 0-30% of at least one other aliphatic acid 70-100 mol% of neopentyl diol and 0-30mol% of at least one other aliphatic polyol (Abstract).

Moens discloses thermosetting composition, having 4-50% wt of crosslinking agent hydroxyalkylamide (see Claims 17 and 19), 55- 95%wt of the above amorphous polyester (see Claim 1), light adsorbers, pigments, etc.

Regarding claim 34, Moens teaches pigments and flow control agents (see Column 9, line 10).

In reference to claims 39-41, Moens teaches coating process, where substrate is a metal, comprising application of thermosetting powder by electrostatic or gun deposition with following heating at temperature of 150-220C.

Moens discloses thermosetting composition (see Abstract) comprising amorphous polyester with acid number within the range of 15-100 mg KOH (see Claim 1) containing 70-100% mol of Isophthalic Acid 0-30% of at least one other aliphatic acid, 70-100 mol% of neopentyl diol and 0-30mol% of at least one other aliphatic polyol (see Abstract).

Moens teaches that polyester has Mn values, determined by GPC within the range of 1100-15500, Tg is 40-80C and melt viscosity 5-15000 Mpa\* s (see Claims 1, 10, 12, 13)

Art Unit: 1765

and hydroxyalkylamide as a crosslinking agent in thermosetting coating composition (see Claim 17).

Moens discloses fumaric, maleic acids and terephthalic acid and 1,4 butanediol, trimethylolpropane (see Column 6, line 5 and line 20).

Moens teaches that his composition has a very good mechanical properties and excellent weatherability.

Therefore, it would have been obvious to a person of ordinary skills in the art to use Moens 's amorphous polymer in Kaplan's applications in order to achieve good mechanical properties and excellent weatherability.

#### **(10) Response to Argument**

Appellants submit that one having ordinary skill in the art would not have been led to select an amorphous polyester derived from a high isophthalic acid concentration, let alone with a mixture of specific polyols (component ii) as specified in claim 29.

In other words Appellants argue that Kaplan does not teach the following limitations of claim 29:

1. amorphous polymer;
2. isophthalic acid concentration;
3. mixture of specified polyols.

Art Unit: 1765

Regarding (1) Kaplan teaches amorphous and/or semicrystalline copolyester (see Abstract).

In reference to (2) Kaplan discloses at least 50 mol %, preferably 80 mol % of isophthalic acid (IPA) (see Column 2, line 55).

Regarding (3) Kaplan teaches the polyol constituent comprising:

- (i) one or more of a linear chain aliphatic C4-16 diol (see Column 3, line 10);
- (ii) at least 50% mol of neopentyl glycol (NPG) (see Column 3, line 20);
- (iii) another linear chain aliphatic and/or cycloaliphatic diol, including 1,4 butanediol, ethylene glycol trimethylolpropane (see Column 3, line 15).

Appellants note that, in Kaplan's Example 3, an acid value of 33 mg KOH/g is disclosed. However, Example 3 is incomplete as apparent from the second line there under, wherein the identity of a component is conspicuously omitted. Accordingly, to whatever extent the Examiner has relied on Kaplan's Example 3, the rejection is further flawed.

However, Kaplan teaches claimed acid number not only in Example 3. Kaplan clearly claims a Hydroxyl value of 10-400 mg KOH/g in his independent claim 1.

Appellant submits that the secondary reference (Moens) discloses that high amount of isophthalic acid leads to poor mechanical properties.

Examiner assumes that the Applicant refers to Example 2 of Moens. In this case amorphous polyester obtained from 1400.5 parts of neopentyl alcohol, 22.3 parts of

Art Unit: 1765

trimethylol propane, 485.0 parts of isophthalic acid and 145 parts of terephthalic acid .

However, there is no data regarding mechanical properties presented.

Appellant submits that the polyester obtained without addition of linear diol performs unfavorably.

However, primary reference (Kaplan) openly teaches a mixture of at least 50%mol of neopentyl glycol with propylene glycol (see Column 3, line 20) as monomers for the polyester synthesis.

Appellant argues that Kaplan or Moens does not teach exact amount of the cross-linking agent.

This is incorrect. In Example 1 of Kaplan 501.8 g of neopentyl glycol, 533.3% of isophthalic acid , 138.2 g of cyclohexane dicarboxylic acid and 186.39 g of dimethyl adipate combined with 80.37 g cross-linking agent (i.e. 1-amino-2-propanol, which is hydroxylalkylamide). Thus, amount of cross-linking agent is within the range of 1-10% wt.

Appellant submits Affidavit under 37 CFR 1.132 submitted on 2/22/2011 and signed by Luc Moens.

Note that Mr. Moens does not disclose any additional experiments in his Affidavit. .All his arguments based exclusively on Specification of the Application examined.

Mr. Moens submits that composition of isophthalic acid rich polyester with hydroxylamide hardener has outstanding degassing properties. Mr. Moens submits that In Example 4 of Kaplan, the amount of the cross-linking agent comprising at least two hydroxyalkylamide groups is above 10 weight %.

However, as discussed above, in Example 1 amount of hydroxylamide is within the claimed range. Example 4 teaches the cross-linking agent comprising at least two hydroxyalkylamide groups. In addition, Mr. Moem's disclosure does not commensurate in scope with the invention as claimed. Mr. Moens refers to par [0017] of published Application. Note that there is no any experimental data (i.e. content of the composition, measurement of degassing properties, etc) in the disclosure.

Appellant argues that reliance on Moens reference ignores the fact that the reference specifically discourages the use of high percentage of isophthalic acid.

Examiner disagrees. Moens clearly teaches 70-10% of isophthalic acid (see Abstract).

Appellant submits that Kaplan uses co-polyester having hydroxyalkylamide end groups, while Specification applies commercially available Primid.

However, such a copolyester completely meets the limitations of claim 29. In addition, secondary reference (Moens) uses the same hydroxyalkylamide as one of the Application examined.

Art Unit: 1765

Appellant submits that iso- and tere-phthalic acids can not be used interchangeably as asserted by Examiner, because they provide different properties.

However, Kaplan discloses at least 50 % of isophthalic acid, preferably 80%.

In addition, Moens discloses 70-10% of isophthalic acid.

**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/GL/

/Gregory Listvoyb/

Conferees:

/David Wu/

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Application/Control Number: 10/544,116  
Art Unit: 1765

Page 14